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New Fungi, mostly Uredineae and Ustilagineae from various Localities, and a new Fomes from Alaska.

By J. B. ELLIS AND B. M. EVERHART.

FOMES TINCTORIUS E. & E.

(On hemlock trees or logs?)

Admiralty Island, Alaska. Collected by James G. Swan, no. 20, 851. Comm. Frederick V. Coville, Botanist, U. S. Dept. Agr.

Pileus dimidiate, sessile, subunguliform, convex below, slaty brown, with a few elevated concentric zones, the surface of which is more or less cracked, substance flobose-fibrous, deep red, somewhat friable, superficial layer indurated, slate color, margin obtuse, 6-7 cm. long and broad, by 4-5 cm. thick. Pores large, 1-2 cm. long, $1\frac{1}{2}$ -2 mm. thick, same color as the inner substance of the pileus, filled with grumous matter and spores. Spores subglobose or short elliptical, red, $5-6 \times 3\frac{1}{2}-4\frac{1}{2}\mu$.

Resembles somewhat *F. lateritius* Cke., but pores much larger and not stratose. When ground up it looks like madder, and is used for dyeing.

USTILAGO ARENARIAE E. & E.

In the inflorescence of *Arenaria congesta* Nutt., North Park, Colo., July, 1894. Alt. 9000 ft. (Prof. C. S. Crandall, no. 119.)

Spore mass purplish-black. Spores oblong-elliptical, opaque, $14-17 \times 8-10\mu$, with a minute hyaline appendage at the base. The spores resemble the sporidia of *Nummularia Bullhardi* Tul.

USTILAGO MULFORDIANA E. & E.

Infesting and destroying the panicles of a species of *Festuca* while still enclosed in the sheath. Near Boise City, Idaho, June, 1892. (A. I. Mulford.)

Mass of spores nearly black. Spores when moistened globose or nearly so, $10-14\mu$ diam., episporium minutely roughened; when dry many of them become oblong or short-cylindrical, $10-14 \times 6-8\mu$.

USTILAGO MONILIFERA E. & E.

In ovaries of *Heteropogon contortus*. Tucson, Arizona, May, 1893. (Prof. J. W. Toumey, no. 2.)

Mass of spores tobacco brown. Spores concatenate, lying in parallel chains, subglobose, subcubical or subangular, hyaline at first, then brown, $8-12\mu$ in the longer diameter, and very minutely echinulate when highly magnified.

SOROSPORIUM SOLIDAGINIS E. & E.

Proc. Acad. Nat. Sci. Phil. February, 1893: 156.

This is the same as *S. cuneatum* Schofield, in the 2d Ed. of Webber's Appendix to the Cat. of Flora of Neb., published June, 1892.

PUCCINIA LIGUSTICI E. & E.

On leaves of *Ligusticum scopulorum* Gray. Sangre de Christo Mts., Colo. Alt. 10,000 ft. July, 1888. (Rev. C. H. Demetrio, no. 201.)

III. Sori hypophyllous, minute, chestnut-colored, erumpent and surrounded by the ruptured epidermis, densely crowded in suborbicular clusters $1\frac{1}{2}$ –2 mm. diam. on small, pallid spots mostly near the margin of the leaf. Teleutospores, elliptical or oblong-elliptical, obtusely rounded at both ends, pale brown, scarcely or only slightly constricted, $22\text{--}30 \times 15\text{--}20 \mu$, epispore slightly roughened but not distinctly thickened above.

PUCCINIA NESAEAE (Ger.).

Aecidium Nesaeae Ger. Bull. Torr. Bot. Club, 6: 47.

On leaves of *Nesaea verticillata* near Concordia, Missouri. (Rev. C. H. Demetrio, no. 145.)

III. Sori orbicular, minute, bordered by the upturned epidermis, collected in dense clusters or also scattered singly, usually clustered on the tubercular-thickened parts of the leaf previously occupied by the *Aecidium*.

Teleutospores oblong, clavate oblong or oblong-elliptical, deeply constricted, strongly thickened at the apex, usually with a hyaline papilla, pale yellowish brown, $30\text{--}45 \times 12\text{--}15 \mu$. Pedicels stout, subhyaline, about as long as the spore.

RAVENELIA ARIZONICA E. & E.

On living leaves of *Prosopis juliflora*. Tucson, Arizona, Aug., 1894. (Prof. J. W. Toumey, no. 37.)

Amphigenous; sori erumpent, soon naked, small, black; heads not compact in the sori, orbicular, $75\text{--}85 \mu$ diam., deep chestnut brown, hemispherical, spiny, marginal spores about $20\text{--}25$ in number, inner spores about as many more, $18\text{--}22 \times 7\text{--}8 \mu$; number of spores in a cross section through the center of the head 7–9. Cystidia ovate-globose, swelling out so as to be visible around the margin of the head viewed from above. Stipe short, straight, consisting of only a few hyphae. The short, nearly hyaline spines are distributed over the entire surface of the head, about as in *R. echinata* D. & L., from which this differs in the larger orbicular

heads, containing a much greater number of spores. *R. Holwayi* Dietel on the same host, has no spines. Uredospores in the same sori with the teleutospores, obovate or elliptical, rough, $23-30 \times 15-18 \mu$, pale yellowish-brown.

DOASSANSIA AFFINIS Ell. & Dearness.

On *Sagittaria variabilis*. London, Canada, July, 1895. (Dearness, 2269.)

Sori hypophyllous, pustuliform, globose or elliptical, $200-300 \mu$ in the longer diameter, dark-colored and collapsing above, gregarious in elongated groups, the part of the leaf occupied being at first yellowish. Spores globose or elliptical, $8-10 \mu$ in the longer diameter, epispore comparatively thin.

Differs from *D. Sagittariae* on the same host, in its larger sori and smaller less angular spores with thinner epispore. From *D. obscura* Setchell it differs in habit and character of the sori; *D. opaca* Setchell differs in its larger spores as well as in some other respects.

AECIDIUM SPHAERALCEAE E. & E.

On leaves of *Sphaeralcea angustifolia*. Las Cruces, New Mexico. June, 1895. (Prof. T. D. A. Cockerell.)

Hypophyllous, densely cespitose in clusters 2-8 mm. diam. Aecidia deep orange color, cylindrical, closed at first, then open, margin toothed, becoming entire, cups about $\frac{1}{2}$ mm. high, $350-400 \mu$ broad. Spores subglobose or elliptical, smooth, $15-20 \mu$ in the longer diameter, orange-yellow. Spermogonia on yellowish spots on the upper side of the leaf.

Differs from *A. Callirhoeae* E. & K. in its cylindrical aecidia and deep orange color.

PERONOSPORA WHIPPLEAE E. & E.

On leaves of *Whipplea modesta*, Ukiah, Mendocino Co., Cal., May, 1894 (W. C. Blasdale).

Mycelium hypophyllous, effused, dirty gray. Fertile hyphae $250-350 \mu$ high, 3-4 times dichotomously branched, the ultimate divisions simple or bifid and usually bearing on one side a short, straight, lateral branchlet $6-8 \mu$ long. Conidia short-elliptical, brownish, smooth, $18-22 \times 12-15 \mu$. Oöspores not seen.

This appears to be distinct from *P. ribicola* Schrtr., the only other species recorded on Saxifragaceae.